MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION,
MINISTRY OF SCIENCE, HIGHER EDUCATION AND INNOVATION
OF THE KYRGYZ REPUBLIC

Educational Institution of Higher Education — Kyrgyz-Russian Slavic University
named after the First President of the Russian Federation B.N. Yeltsin

APPROVED BY
Director Kelland BMT
(Position)
Abilova S.S.
(Full name)
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PROFESSIONAL CYCLE
Normal Physiology
Course (Module) Description

Developed by	**Department of Anatomy, Histology and Physiology**
Curriculum	310501_26_1 лд ин.plx 560001 General Medicine (for International Students)
Qualification	**Physician**
Mode of study	**Full-time**

Distribution of Course Hours by Semester

Semester (<Year>.<Semester in the year>)	2 (1.2)		3 (2.1)		Total	
Weeks	17		18			
Type of classes	Curriculum	Work plan	Curriculum	Work plan	Curriculum	Work plan
Lectures	32	32	16	16	48	48
Practical classes	64	64	48	48	112	112
Contact hours during the theoretical training period	0,3	0,3			0,3	0,3
Contact hours during the examination session			0,5	0,5	0,5	0,5
Including	4	4	5	5	9	9
Total classroom	96	96	64	64	160	160
Contact hours	96,3	96,3	64,5	64,5	160,8	160,8
Independent study	53,7	53,7	26	26	79,7	79,7
Assessment hours			29,5	29,5	29,5	29,5
Total	150	150	120	120	270	270

1. OBJECTIVES OF THE COURSE	
1.1	To develop students' systematic knowledge of the vital functions of the organism as a whole and of its individual parts; the basic principles governing their functioning and the mechanisms regulating them through interactions with one another and with environmental factors; and the physiological foundations of clinical and physiological research methods used in functional diagnostics and in the study of human integrative activity.

2. PLACE OF THE COURSE IN THE STRUCTURE OF THE EDUCATIONAL PROGRAM	
Educational program cycle	Б1.О.03
2.1	**Prerequisites for students:**
2.1.1	Histology, Embryology, and Cytology
2.1.2	Anatomy
2.1.3	Biology
2.1.4	Latin
2.1.5	Fundamentals of Research
2.2	**Courses and practical training for which completion of this course (module) is a prerequisite:**
2.2.1	Pathophysiology and Clinical Pathophysiology
2.2.2	Pharmacology
2.2.3	Immunology

3. STUDENT COMPETENCIES DEVELOPED AS A RESULT OF COMPLETING THE COURSE (MODULE)
PC-6: Able and prepared to assess morphofunctional and physiological states, as well as pathological processes in the human body, taking age and sex groups into account when solving professional tasks.
Knowledge:
Skills:
Proficiency:

Upon completion of the course, the student must:

3.1	**Knowledge:**

Structural and functional properties of striated and smooth muscles and the specific features of regulation of their contraction. The role of various divisions and structures of the central nervous system (CNS) in regulating the somatic and visceral functions of the body. Reflex arcs with visceral and somatic components. The blood system and its role in maintaining and regulating the body's homeostatic constants; blood functions; characteristics and functional properties of physiological blood constants; blood groups, the Rh factor and its role in pathology; rules for blood transfusion; and mechanisms of hemostasis. The main stages and parameters of external respiration, and the respiratory center and its structure. Digestion as a process required to perform the body's energy and plastic functions; the specific features and principles of the structural and functional organization of the gastrointestinal tract; and the development of hunger and satiety. The main processes and mechanisms involved in maintaining constant body temperature. The main stages of urine formation and the mechanisms regulating them. The major homeostatic functions of the kidneys. The main properties of cardiac muscle and their differences from skeletal muscle; mechanisms of electromechanical coupling; the chambers and valvular apparatus of the heart. The cardiac cycle and the main mechanisms regulating cardiac activity. The principle of calculating energy expenditure by indirect calorimetry. The specific features of the microcirculatory system, transcapillary exchange and its regulation. The main morphofunctional features of the organization of the various divisions of the sensory systems. Forms of expression of higher nervous activity (HNA) in humans, and the classification and characteristics of HNA types. Mechanisms of conditioned reflex formation and inhibition, their role in clinical practice, and the components of the functional system of a behavioral act. The concept and classification of pain; the specific features of the morphofunctional organization of the nociceptive and antinociceptive systems.

3.2	**Skills:**

Analyze the manifestations of blood functions; the organization of the different stages of respiration and their regulation; and the specific features of human higher nervous activity. Conduct assessments of the state of the body's blood coagulation system; determine blood groups and the Rh factor; assess the main physiological properties of excitable tissues; examine reflex activity of the nervous system and autonomic reactivity; assess sensory system functions and pain sensitivity; identify individual typological characteristics of a person; and assess the functional parameters of the somatic and visceral systems (respiratory and cardiovascular) under different functional states of the body.

3.3	**Proficiency:**

Methods for determining blood groups and the Rh factor; evaluating complete blood count results; measuring blood clotting time; assessing erythrocyte osmotic fragility; counting erythrocytes and leukocytes; evaluating urinalysis results; palpating the pulse; measuring blood pressure; auscultating heart sounds; performing spirometry and peak flowmetry; assessing basal metabolic rate and the degree of its deviation; and assessing types of higher nervous activity (HNA).